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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/442,568 11/18/99 DIMEO

F 401

EXAMINER

MM91/0122

OLIVER A ZITZMANN
ATMI INC
7 COMMERCE DRIVE
DANBURY CT 06810

EHAM, H
ART UNIT

PAPER NUMBER

2877
DATE MAILED:

01/22/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/442,568

Applicant(s)

DIMEO ET AL.

Examiner

Hoa Q. Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892)
- 16) ☒ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 18) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 19) ☐ Notice of Informal Patent Application (PTO-152)
- 20) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings filed on 11/18/99 are objected to as indicated on attached PTO-948.
2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the "output alarm" in claims 13-14, "optical waveguide" in claim 18-20, "a plurality of light sources and detectors" in claims 23, 26, 27, 30, 33, 34 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-5, 7-14, 18-21, 25-28, 30-33, 35-36, 40-41, 44-46, 48-50, 53, 55, and 62 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Ito et al (4,661,320).

Regarding claims 1, 21, 30, 45, 46; Ito et al discloses a light source (5), detector (6) and an optical barrier (1) therebetween, wherein the optical barrier response to the presence of the hydrogen by responsively changing from a first optical state to a

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different second state to indicate the presence of hydrogen gas in the gaseous environment. See figure 1 and column 3 line 64 through column 4 line 13.

Regarding claim 2, Ito et al teaches that the optical barrier (1) will block the transmitted light according to the density of the gas (column 4 lines 3-13).

Regarding claims 3-4, Ito et al teaches that in the normal state the transmitted light is received by the detector (6) (column 3 line 64 through column 4 line 2).

Regarding claim 5, Ito et al teaches that the device (1) is made of catalytic metal (2) (column 3 lines 1-2).

Regarding claims 7-9, Ito et al teaches that protective film comprises a palladium film (column 3 lines 19-20).

Regarding claims 10, 25, see figure 4 for unitary portable article.

Regarding claims 11 and 12, see figure 1 for power source (7).

Regarding claims 13-14, see column 2 lines 65-68 for giving an alarm signal based on the amount of transmitted light.

Regarding claims 18-20, see figures 4, 6, and 7 for optical waveguide.

Regarding claims 26-28, see figures 9-12 for a plurality of light sources, barriers, and detectors.

Regarding claims 30, 36 and 45, It is noted that the barrier of Ito et al acting as a filter.

Regarding claims 31-33, Ito et al teaches that the light source is a light emitting diode (column 2 lines 58-59).

Regarding claim 35, Ito et al teaches that the detector is a photodiode (column 2 lines 65).

Regarding claims 40-41, 44, 53, 55 and 62, Ito et al teaches that the thin film is overlaid by palladium (Pd) , platinum (Pt), etc... (column 3 line 11).

Regarding claims 47-49, see column 3 lines 16-27 for deposition method.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 6, 15-17, 22-24, 29, 34, 37-39, 42-43, 47, 51-52, 54, 56-61 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ito et al in view of Griessen et al (Journal of Alloys and Compounds, vol. 153-154 (1997)).

Regarding claims 6, 29, 37-39, 51, 52, 56-61; Ito et al does not explicitly teach that the barrier comprises yttrium thin film, trivalent rare earth metals, etc...; however, such a feature is known in the art as taught by Griessen et al. Griessen et al (of record) teaches that the hydrogen can be determined on the switchable optical properties of Yttrium and lanthanum hydride films. Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the barrier of Ito et al by a Yttrium and lathanum hydride films of Griessen et al for the same purpose of determining the presence of hydrogen gas in a gaseous environment.

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Regarding claims 15-17, 22-24, 34, 47; Ito teaches the use of a light emitting diode and does not teach that the light source could be an incandescent lamp, light bulb; however, it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace the light source of Ito et al by a lamp because the device would function in the same manner whether the light source is a LED or a lamp.

Regarding claims 42-43 and 54; it is well known in the art that a hydrogen-pereable material is doped with a dopant such as Mg, Al, Ca, etc... to form a rare earth metal device.

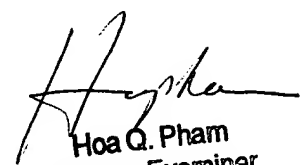
7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Jelley et al (5,317,897) , Doty et al (4,836,012), Hunter (5,668,301) and Carr et al (5,691,465) disclose a gas sensor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to examiner Hoa Pham whose telephone number is (703) 308-4808. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 or 7724.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Pham/hp

January 12, 2001


Hoa Q. Pham
Primary Examiner